REBUTTAL TESTIMONY

OF

JOSEPH M. LYNCH

ON BEHALF OF

SOUTH CAROLINA ELECTRIC & GAS COMPANY

DOCKET NO. 2008-196-E

Q. ARE YOU THE SAME JOSEPH M. LYNCH THAT HAS PREFILED DIRECT TESTIMONY IN THIS CASE?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THIS PROCEEDING?

A. The purpose of my rebuttal testimony is to address certain statements made by Ms. Nancy Brockway in her direct testimony which pertain to SCE&G's planning process, the feasibility of renewable power and the Company's demand-side management programs.

Q. ON PAGE 13 OF HER DIRECT TESTIMONY, MS. BROCKWAY STATES THAT THE DEFERRED CONSIDERATION OF THE COMPANY'S INTEGRATED RESOURCE PLAN ("IRP") "ASSUR[ED] THAT NO PUBLIC OR STAKEHOLDER REVIEW OR COMMISSION

APPROVAL OF ITS PLANNING PROCESS COULD OCCUR INDEPENDENT OF THE DECISION ON THIS NUCLEAR PROJECT." DO YOU AGREE WITH THIS CONTENTION?

A. No, I do not. SCE&G requested that the Commission defer a meeting on its IRP until the hearing concerning the Company's Base Load Review Act ("BLRA") Application because the Company believed the hearing on the Company's application in this matter would likely be in October 2008 – a few weeks after the scheduled IRP meeting on September 23, 2008. The Company therefore reasoned that it would have been redundant and inefficient to have the Commission review the IRP twice in the course of a few weeks. This reasoning remains sound in my judgment even though the hearing has been rescheduled to December 1, 2008.

Moreover, Ms. Brockway's statement that the public was not allowed to have input in the planning process independent of this proceeding is simply incorrect. Interested parties have had many opportunities to review SCE&G's planning process since SCE&G first began filing its annual resource plans in 1989. Each plan contains a ten (10) or fifteen (15) year forecast of loads and planned resources which were available for public scrutiny. It is my understanding that the Commission's regulations governing electric utility IRPs allow interested parties to request further information on the IRP via the discovery process. In those cases where there is sufficient interest and the Commission deems it worthwhile, parties can request a hearing before the

Commission concerning the Company's IRP. In fact, I understand that certain parties expressed interest in the past and that the Commission held hearings concerning the Company's IRP in the early 1990's. Since that time, I am not aware of any interested parties seeking additional information or asking the Commission to hold hearings. Rather, it is my understanding that interested parties have waited to express their opinion on the Company's IRP until the Company files an application for approval to construct new generation facilities.

Q. WHEN DID SCE&G BEGIN SERIOUS CONSIDERATION OF THE CONSTRUCTION OF THE TWO PROPOSED NUCLEAR PLANTS?

A. When the current Presidential Administration and the United States Congress began encouraging the resurgence of nuclear power and passed the Energy Policy Act of 2005, the Company became very interested in nuclear generation and began evaluating its feasibility. In February 2006, the resulting tentative resource plan was made public in the Company's 2006 IRP which stated in part the following:

> SCE&G and Santee Cooper are currently planning to jointly build an AP1000 Westinghouse nuclear unit at the VC Summer site. The Westinghouse unit is preferred because of the size of the unit, about 1100 MWs, and because of the progress that Westinghouse has made in its engineering and design. The Westinghouse design was approved by the Nuclear Regulatory Commission (NRC) on September 13, 2004 and the engineering is currently about 60% complete. The AP1000 design uses passive safety systems to enhance the safety of the unit and to satisfy the NRC safety

> criteria. While SCE&G is currently pursuing the nuclear option and believes it to be in the best interest of its rate payers, the Company does have several years before it is financially committed.

The Company also discussed its need for baseload capacity and fuel diversity in its 2007 IRP which stated SCE&G's preliminary conclusions that the nuclear option appeared advantageous. In addition, the IRP included a discussion of the Company's consideration of non-traditional sources of power which provided as follows:

> Both wind and solar have been considered but because of the high capital costs and the limited energy production caused by low wind speeds and insufficient solar radiation, these generation sources are not economical within the SCE&G service territory. SCE&G has also evaluated potential biomass applications in recent years, but none have proven economically feasible and operationally practical yet, but we continue to examine proposals and opportunities as they are identified.

Furthermore, the Company released several press statements concerning its consideration of nuclear feasibility during this time, including its 2005 announcement concerning the continued partnership with Santee Cooper to explore the expansion of the V.C. Summer Nuclear Site. This information was widely publicized; I therefore believe the public was fully informed of SCE&G's interest in building new nuclear generation.

Q. DO YOU AGREE WITH MS. BROCKWAY'S CLAIMS THAT THE COMPANY DID NOT CONSIDER ALTERNATIVES TO NUCLEAR GENERATION?

A. No, I do not. As I discussed in my direct testimony, SCE&G considered many generation alternatives including solar, landfill gas, wind, biomass, DSM and peaking and intermediate power. Further, it is clear from the Company's annual IRP filings since 2006 that SCE&G was evaluating the feasibility of nuclear generation compared to other alternatives. Contrary to Ms. Brockway's assumption, the Company did not make a final decision on nuclear generation until recently – a point that was clearly made in the Company's 2008 IRP filed on February 28, 2008 which stated:

> Although SCE&G is considering the nuclear option, it is not a settled matter **and alternative options continue to be studied**. However SCE&G and Santee Cooper are currently planning to build a jointly owned nuclear unit at the VC Summer site if the cost and other matters are resolved favorably. The Westinghouse AP1000 design and the General Electric ESBWR design are both being considered as potential options. Both designs use passive safety systems to enhance the safety of the unit and to satisfy the NRC safety criteria. In addition to the environmental benefits, the nuclear option will also offer an opportunity to diversify our capacity. SCE&G's current capacity is about 43% coal fired, 30% gas fired, and 11% nuclear (See page 9 for the generated energy distribution). Adding more nuclear capacity can provide a better balance among fuel types. (Emphasis supplied).

Q. DO YOU AGREE WITH MS. BROCKWAY'S ASSERTION THAT CERTAIN PARTIES IN SOUTH CAROLINA ARE SERIOUSLY

CONSIDERING THE CONSTRUCTION OF WIND POWERED GENERATION?

A. While I agree that studies related to wind powered generation are currently underway, I disagree with her implication that these alternatives will be viable in the near future. On page 17 of her testimony, Ms. Brockway points out, "Clemson University, Coastal Carolina University and Santee Cooper are working together to perform a South Carolina Coastal Wind Resource Assessment." SCE&G is aware of this project and understands that this assessment is a data collection effort by these entities. This assessment reflects that the data currently available is insufficient for a company to decide that it is prudent to begin constructing wind turbines off the coast of South Carolina. Furthermore, Ms. Brockway fails to consider that there are no wind projects currently operating off-shore of the United States.

Q. ARE THERE ANY OFF-SHORE WIND PROJECTS CURRENTLY OPERATING IN THE UNITED STATES?

A. No. While several have been proposed, none are currently operating off-shore. I understand that the off-shore wind project closest to being built is the Bluewater Wind Project, which has signed a purchase agreement with Delmarva Power & Light ("DP&L"). DP&L has reported that the cost of this generation is not economical compared to the cost of other generation in its portfolio. This assessment by DP&L confirms our evaluation. Thus,

considering our understanding of the cost assessment, the unreliability of expected energy output, and the fact that there are no off-shore wind farms operating in U.S. waters, SCE&G does not consider off-shore wind as a proven or commercially viable option at this time.

Q. DO YOU AGREE WITH MS. BROCKWAY'S STATEMENT ON PAGE 17 OF HER DIRECT TESTIMONY THAT, WHILE RELIABLE CAPACITY FROM A WIND TURBINE IS OFTEN MUCH LOWER THAN ITS NAMEPLATE CAPACITY, IT DOES NOT PREVENT UTILITIES ACROSS THE COUNTRY FROM INCLUDING WIND AS AN IMPORTANT RESOURCE IN THEIR PORTFOLIO?

A. No. I believe her statement is only partially true. The reliable capacity from wind turbines is <u>always</u> less than their nameplate capacity. That is why in Texas, the state with the most wind generation in the country, the Electric Reliability Council of Texas ("ERCOT") will only consider 8.7% of the wind capacity as reliable capacity for serving load. This means that a 1,000 MW wind farm requires 913 MWs of additional capacity, such as gas fired combustion turbines, to back stand the wind's capacity. Also, when Ms. Brockway speaks of utilities across the country including wind power in their generation fleet, she fails to mention that most of this capacity is being added in what has become known as the "wind corridor" of the country where wind speeds are consistently high. This area of the country is shown on **Rebuttal**

Exhibit No. ___ (JML-6) which is a map produced by the U.S. Department of Energy's National Renewable Energy Laboratory showing wind speeds across the country. Also, this wind map clearly shows the lack of wind resources in South Carolina.

Additionally, **Rebuttal Exhibit No. __(JML-7)** demonstrates the importance of wind speed distribution by superimposing the hourly wind speed measurements taken at the V.C. Summer Nuclear Site in Fairfield County on a typical power curve of a wind turbine. This power curve shows the output of the wind facility as a percent of rated capacity at various levels of wind speed. The curve shows that a wind turbine will not reach rated capacity until the wind speed reaches about 11 meters per second ("m/s") which will only happen for a few hours per year at this location and throughout much of South Carolina. Therefore, while wind turbines produce power at wind speeds between 3 m/s and 11 m/s, wind resources in South Carolina result in a generating facility that will only achieve a capacity factor of approximately 9.3%. This means that the wind facility will only generate 9.3% of maximum potential energy whereas a nuclear plant will achieve a capacity factor of approximately 92% – a tenfold increase.

Moreover, during periods of peak demand in the summers in South Carolina, wind resources are more unreliable than during other seasons of the year. This is demonstrated by **Rebuttal Exhibit No. __ (JML-8)** which shows the average wind speed for a typical summer day at the V.C. Summer Nuclear

Site. During the afternoon, especially between the hours of 2 p.m. and 6 p.m. when the SCE&G system reaches its peak demand, average wind speeds are approximately 3 m/s or 6.7 mph. As reflected in the wind turbine power curve contained in **Rebuttal Exhibit No. ___ (JML-7)**, wind speeds of 3 m/s are insufficient for the turbine to produce any amount of power. Consequently, while ERCOT will claim only a small percentage of wind capacity, 8.7%, as reliable in Texas, SCE&G would claim 0% of wind capacity due to the fact that SCE&G would not be able to depend upon a land-based wind turbine to meet any of its summer peak demand. Thus, wind resources are of particularly limited value to assist the Company in meeting the peak demand of its customers.

Q. MS. BROCKWAY CLAIMS ON PAGE 18 OF HER DIRECT TESTIMONY THAT THE COMPANY "SETS UP A STRAW MAN BY CALCULATING WHAT WOULD BE REQUIRED TO DISPLACE 2,234 MWS OF [NUCLEAR] GENERATION." IS THAT WHAT THE COMPANY IS DOING?

A. Not at all. The Company stated in its application that it would take approximately 10,276 MWs of solar panels covering 61,656 acres or 6,852 MWs of wind turbines covering 120,192 acres to produce an amount of electric energy equivalent to that of 2,234 MWs of nuclear capacity represented by the two plants under question. This comparison is designed to illustrate –

especially to parties interested in clean, non-emitting resources – the tremendous amount of clean energy that these two nuclear plants will produce and how difficult it would be to ensure the same amount of clean energy from another resource.

Q. WHAT IS YOUR OPINION WITH RESPECT TO MS. BROCKWAY'S SUGGESTION ON PAGE 18 OF HER DIRECT TESTIMONY THAT SCE&G SHOULD CONSIDER ALTERNATIVE SOURCES OF GENERATION AS "PART OF A SUPERIOR ALTERNATIVE PORTFOLIO?"

A. As I stated in my direct testimony, SCE&G has evaluated existing alternatives and will evaluate new alternatives as they become available. Our evaluation process considers how each alternative for generation enhances the Company's portfolio mix. However, for the Company's current needs, our evaluation process reflects that alternatives are neither economical nor reliable and therefore do not yield a superior portfolio. In sum, the growing demand for electricity simply cannot be met through existing alternative generation and the addition of new nuclear baseload facilities is required to safely and reliably serve the Company's customers.

Q. DO YOU AGREE WITH MS. BROCKWAY'S CONCLUSIONS BEGINNING ON PAGE 18 OF HER DIRECT TESTIMONY

REGARDING THE SUITABILITY OF CONSTRUCTING SOLAR POWER IN SOUTH CAROLINA AND HER SUGGESTION THAT DUKE ENERGY'S SOLAR INITIATIVES IN NORTH CAROLINA DEMONSTRATE SOLAR POWER'S VIABILITY FOR THIS STATE?

A. First, let me say that I agree with Ms. Brockway in that central-station arrays for concentrating solar energy are not suitable for South Carolina with present technology. However, I disagree with her suggestion that the fact that Duke Energy announced plans to purchase 16 MWs of photovoltaic ("PV") capacity and invest $100 million to acquire 16.2 MWs of additional PV capacity implies that there is significant potential for electric generation from PV solar panels in South Carolina. In fact, Duke Energy recently announced that it was scaling back this solar project to invest only $50 million rather than its initially projected investment of $100 million.

Although Ms. Brockway commends Duke Energy for investing in "both concentrated and distributed solar power" which she believes suggests that "there is more potential for such a resource in South Carolina than SCE&G considers viable," she ignores the fact that the state of North Carolina has implemented a Renewable Portfolio Standard which mandates that its electric utilities obtain a percentage of their energy from renewable sources. While the planned solar project may advance its system towards a required level of production, Duke Energy's current proposal will only have the

potential to supply a total of 32.2 MW on its 21,000 MW system, or approximately 0.15% of its electric generation needs.

Similarly, Ms. Brockway neglects to discuss the significant level of cost associated with this power source. Analyzing Duke Energy's original proposal, its investment of $100 million to build 16.2 MWs of solar power represents a cost of more than $6,000 per KW for a resource that will only have an 18.2% capacity factor. Unless and until the cost of photovoltaic panels is reduced significantly, it is unlikely there will be economic potential to employ widespread use of PV solar panels in South Carolina.

Q. DO YOU AGREE WITH MS. BROCKWAY'S STATEMENT ON PAGE 20 OF HER DIRECT TESTIMONY THAT THE COMPANY HAS NOT SHOWN THAT "AS OF 2009, IT WILL HAVE EXHAUSTED ALL DEMAND-REDUCTION POTENTIAL VIA DSM?"

A. No. But in order to explain the point the Company is making, I have to clarify Ms. Brockway's broad-based use of the term DSM and point out that it is necessary to separately consider the two components of DSM: demand response and energy efficiency. Demand response programs, which are also known as load management programs, are designed to lower system demands for short periods of time, i.e., for a few hours, usually during times of high demands on the system. Examples of demand response programs are interruptible load programs and direct load control of customer appliances.

Energy efficiency programs on the other hand tend to reduce customer consumption throughout a season or throughout the year. Examples of such programs would include high efficiency appliances and increased insulation. While energy efficiency programs also reduce peak demands, this is neither their main effect nor their primary purpose.

Q. WHAT THEN IS THE COMPANY SAYING ABOUT EXHAUSTING ALL DEMAND-REDUCTION POTENTIAL?

A. Beginning on page 17 of my direct testimony, I explain why the Company believes it has reached the maximum limit for useful demand response. This conclusion is a function of our system's load shape, its existing generating resources and its reserve margin. Our system load shape has broad peak periods in the summer which would require our customers to agree to many hours of interruptions over many days in a year to reduce the need for capacity resources on the system. In other words, given the current amount of demand response resources in place, to further reduce the Company's need for capacity would require customers to agree to have their service interrupted for extensive periods of time during the summer peaks. Given the time periods involved, the interruptions could be very disruptive to customers. Additionally, our fleet of generating resources includes the Saluda Hydro which consists of 206 MWs of energy-limited capacity that is functionally similar to a demand response program. Finally, SCE&G's current resource plan projects a reserve

margin near 12% which is the lower end of its 12%-18% target range. Based on these limitations, SCE&G cannot maintain a reliable system throughout the year if it relies on additional demand response resources to meet capacity needs.

Q. DOES SCE&G CONTEND THAT IT HAS EXHAUSTED THE POTENTIAL FOR ENERGY EFFICIENCY ON ITS SYSTEM?

A. No. As I acknowledged in my direct testimony, the Company is planning to expand its energy efficiency programs. However, SCE&G does contend that it currently has a reasonable portfolio of energy efficiency programs. Additionally, the Company has retained the services of ICF International to explore ways to expand on this portfolio. Moreover, and more importantly for this hearing, SCE&G has incorporated the potential impact of new DSM programs in its resource planning and concluded that the construction of two nuclear plants is in the best interest of its customers.

Q. BEGINNING ON PAGE 25 OF HER PREFILED DIRECT TESTIMONY, MS. BROCKWAY CLAIMS THAT SCE&G'S MEASURES OF SUCCESS WITH DSM DO NOT DEMONSTRATE SUCCESS AT ALL. SPECIFICALLY, ON PAGE 26, SHE STATES: "THE COMPANY'S STATISTICS MEASURE ACTIVITY, NOT RESULTS." DO YOU AGREE?

A. No, I do not agree. To properly address Ms. Brockway's statements, I need to discuss the two components of DSM separately. With regard to demand response, the Company depends on its ability to access over 200 MWs of interruptible load and standby generation when needed. It is critical that SCE&G measure these effects because the Company depends on its demand response resources to maintain reliable service to customers during peak periods. Additionally, SCE&G is able to measure the effects of the demand response relatively easily because the times during which SCE&G calls on this capacity are concentrated into a few hours that occur over the course of a few days of the year.

On the other hand, the effectiveness of energy efficiency programs is more difficult to measure accurately because the impacts are spread over a season or the year and their impacts are easily confounded with other effects. For example, if a customer installs additional insulation to his home, he will certainly use less energy than he would have had he not added insulation, all other things being equal; however, other things are seldom equal. Despite increased insulation, the customer could very easily end up consuming more energy because he purchased a flat screen television, his normal consumption patterns were disrupted by abnormal weather, or he simply decided to be more comfortable and adjusted his thermostat settings. Because of the host of factors which contribute to a customer's consumption and notwithstanding Ms. Brockway's criticism, the Company believes that indicators that its energy

efficiency programs are proving successful include: 1) over 50,000 residential customers are on our Conservation Rate; 2) almost 200,000 customers are registered for internet access which allows them to obtain personal account information and an energy consumption analysis; and 3) 20% of commercial sales are served on Time of Use or Real Time Pricing rates.

Q. MS. BROCKWAY STATES ON PAGE 21 OF HER DIRECT TESTIMONY THAT CALIFORNIA HAS FLATTENED ITS PER CAPITA KWH USE FROM 1975 THROUGH 2004. PLEASE PLACE THIS STATEMENT IN PROPER CONTEXT.

A. What Ms. Brockway fails to mention is that the price for power in California over those years has increased at a faster pace than the national average and that today, the residential price for power is more than 30% higher than the national average. To illustrate the magnitude of price difference between California and South Carolina, I have calculated the electric bill of a typical South Carolina single family home under South Carolina rates and under California rates. These calculations are shown in **Rebuttal Exhibit No.___ (JML-9)**. The typical South Carolina single family home uses 18,500 kWh per year and, under SCE&G's currently approved rates, would pay approximately $2,064 per year. In California, this same customer would pay approximately $4,258 under Pacific Gas & Electric ("PG&E") rates, approximately $3,171 under Southern California Edison ("SCE") rates and

approximately $3,628 under San Diego Gas & Electric ("SDG&E"). With such high rates, which are on average 79% higher than SCE&G's approved rates, more DSM programs can be cost justified. More directly, however, customers are likely to be forced into conservation measures by pure economic concerns as electric costs rise. For customers, a key consideration in managing electricity use is how much the next kWh of electricity they use will cost, i.e., the utility's marginal rates. Even in this regard, PG&E's marginal rate of $0.41059, SCE's marginal rate of $0.28082 and SDG&E's marginal rate of $0.24192 are all more than double SCE&G's marginal rate of $0.11591/kWh. California's levelized electricity consumption is likely to be as much the result of high costs for electricity as the effectiveness of DSM programs.

Q. ON PAGE 22 OF HER DIRECT TESTIMONY, MS. BROCKWAY OFFERS EXHIBIT NB-3 BASED ON EIA FORM-861 FILINGS AS EVIDENCE THAT "A NUMBER OF UTILITIES AROUND THE COUNTRY HAVE BEEN ABLE TO HARVEST SIGNIFICANTLY MORE ENERGY AND DEMAND SAVINGS THAN THE COMPANY ACKNOWLEDGES ARE POSSIBLE." DO YOU AGREE?

A. The data reported in Ms. Brockway's Exhibit NB-3 is the percent reduction in energy as a result of energy efficiency programs as reported to the Energy Information Administration ("EIA") on Form-861. Considering the difficulty in measuring energy efficiency impacts, I am unwilling to accept

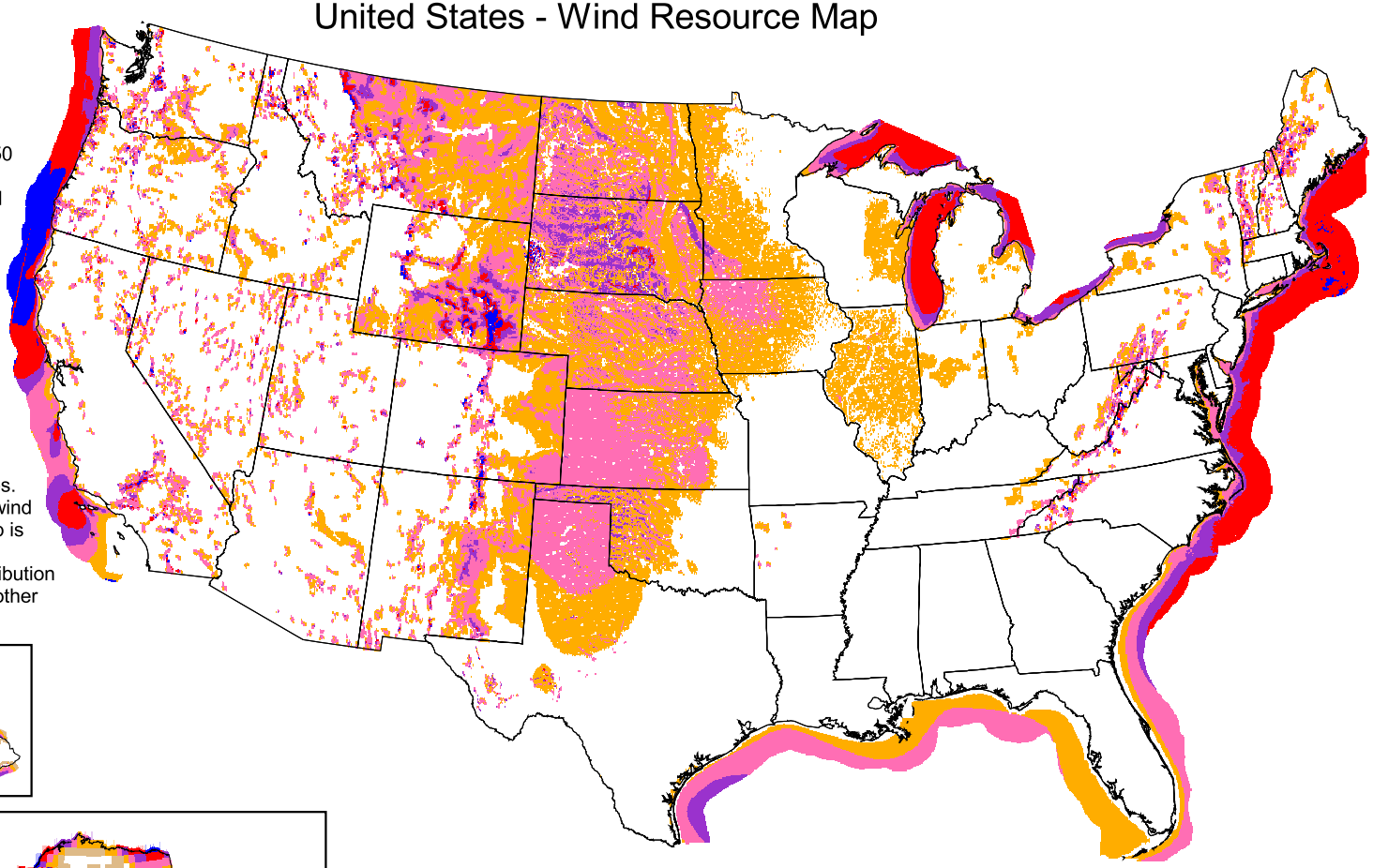
these results on face value. These are self reported numbers with no requirement that there be consistent or audited measurement data underlying them. However I would point out that there are only 14 utilities listed who report having achieved a result of 0.50% or greater and most of these utilities were located in the northeast or the western part of the country and none were from the southeast. **Rebuttal Exhibit No. ___ (JML-10)** attached to my testimony is derived from the same EIA database and shows the 15 most effective utilities in the southeast, i.e., in the Southeastern Reliability Council ("SERC") and the Florida Reliability Coordinating Council ("FRCC") for the last three years, 2004-2006. On average, the energy efficiency programs of these 15 utilities have resulted in reported energy savings of 0.16%, 0.17% and 0.13% for the years 2006, 2005 and 2004 respectively. Furthermore, except for the Laurens Electric Cooperative, no utility reported more than 0.44%. Based on this information and as I stated in my direct testimony, I do not believe that the Company will be able to consistently achieve more than 0.50% reduction in energy growth with any new energy efficiency programs. In summary, the Company's analyses demonstrate that even with energy reductions of 0.50%, the nuclear decision is the best alternative for our customers and it is, therefore, clear that the Company has chosen a reasonable and prudent course of action in pursuing its construction plans for Units 2 and 3 at the V.C. Summer Nuclear Site.

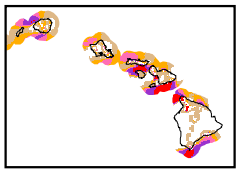
Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

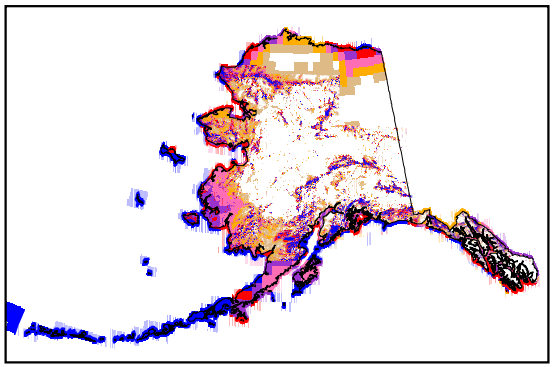
A. Yes.

United States - Wind Resource Map

This map shows the annual average wind power estimates at 50 meters above the surface of the United States. It is a combination of high resolution and low resolution datasets produced by NREL and other organizations. The data was screened to eliminate areas unlikely to be developed onshore due to land use or environmental issues. In many states, the wind resource on this map is visually enhanced to better show the distribution on ridge crests and other features.







Wind Power Classification

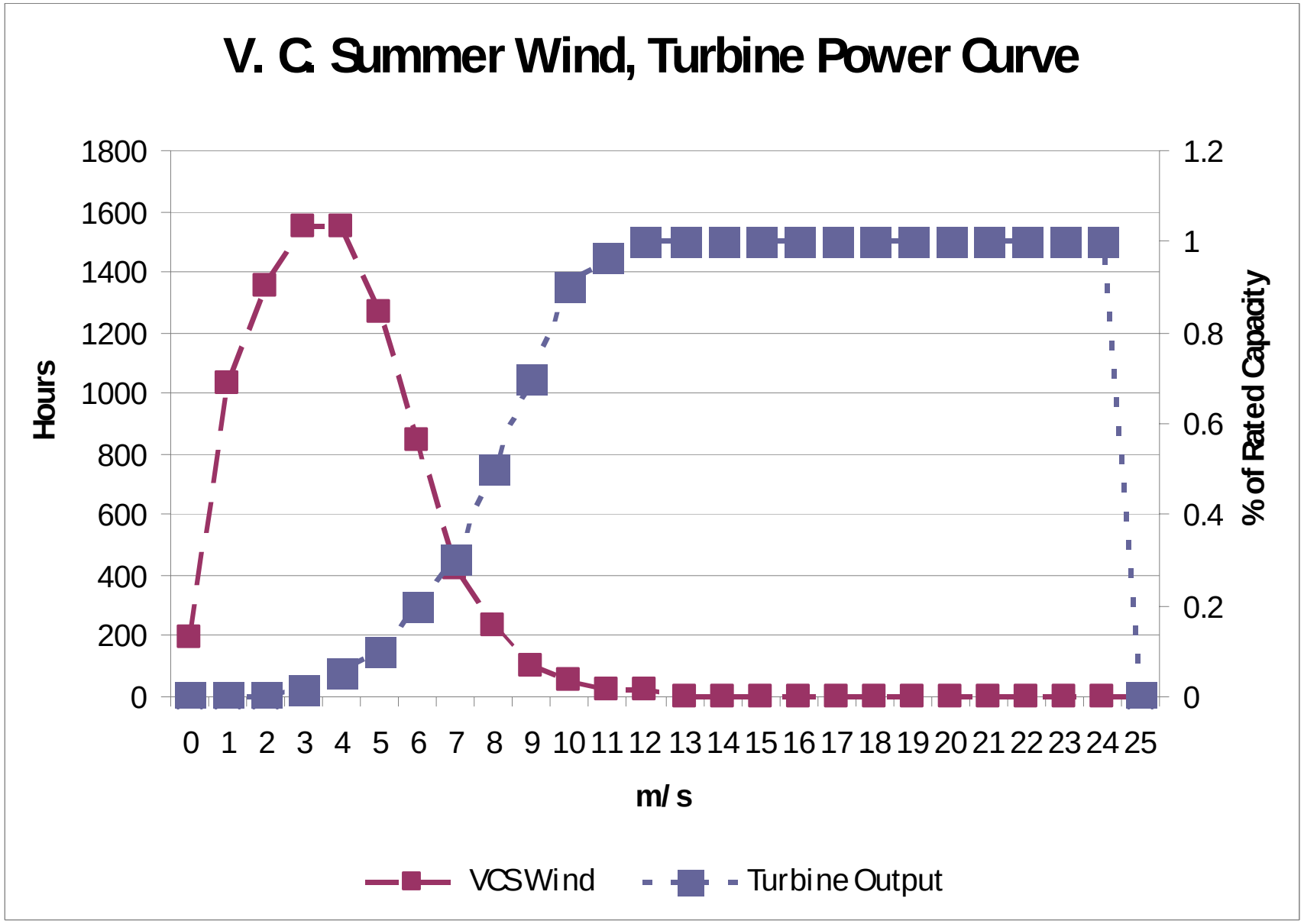
Wind Power Class	Resource Potential	Wind Power Density at 50 m W/m^2	Wind Speed[a] at 50 m m/s	Wind Speed[a] at 50 m mph
3	Fair	300 - 400	6.4 - 7.0	14.3 - 15.7
4	Good	400 - 500	7.0 - 7.5	15.7 - 16.8
5	Excellent	500 - 600	7.5 - 8.0	16.8 - 17.9
6	Outstanding	600 - 800	8.0 - 8.8	17.9 - 19.7
7	Superb	800 - 1600	8.8 - 11.1	19.7 - 24.8

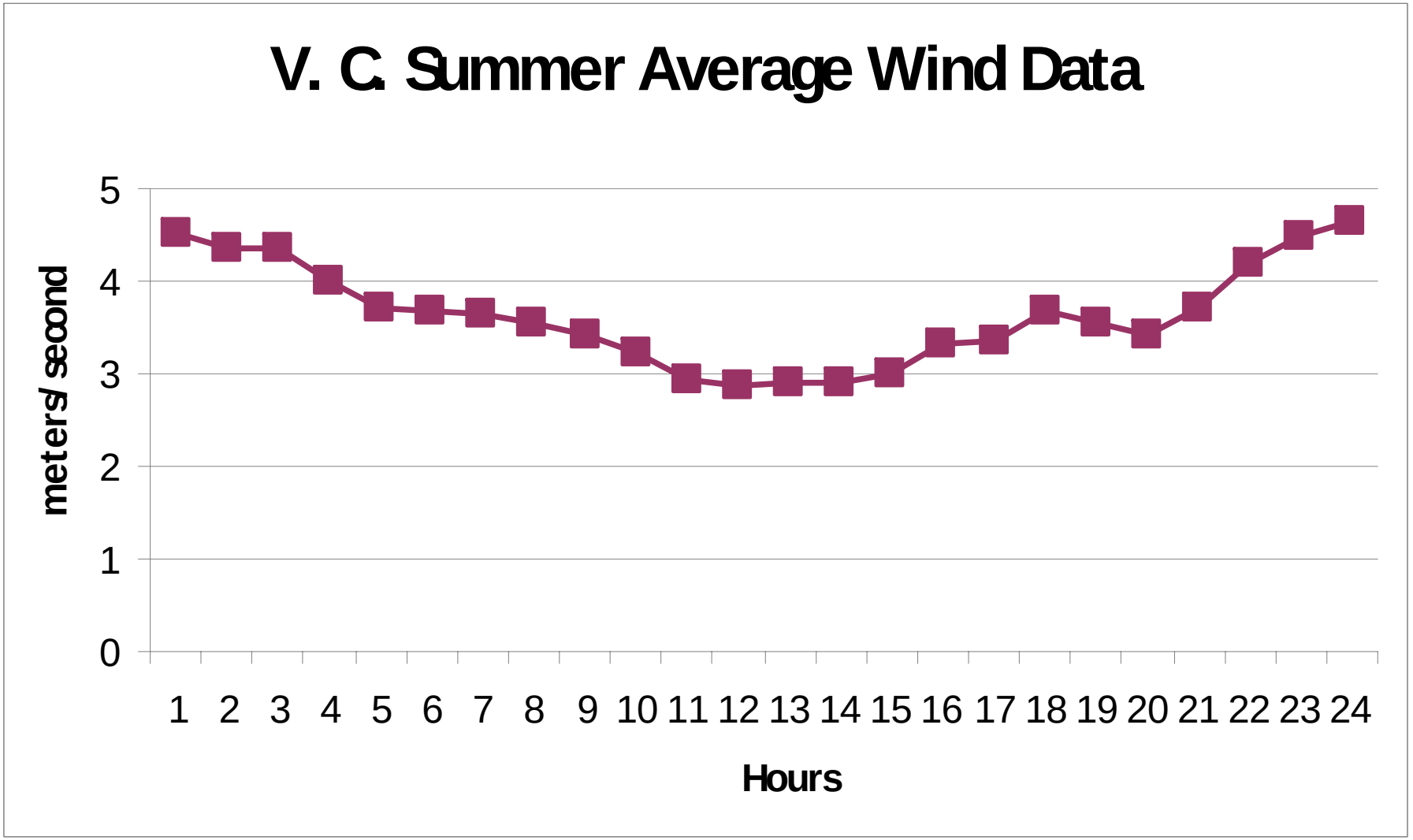
[a] Wind speeds are based on a Weibull k value of 2.0

NREL

U.S. Department of Energy
National Renewable Energy Laboratory

23-JAN-2008 1.1.3


V. C. Summer Wind, Turbine Power Curve
Hours
% of Rated Capacity
m/s
VCSWind
Turbine Output
0
200
400
600
800
1000
1200
1400
1600
1800
0.2
0.4
0.6
0.8
1
1.2
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


V. C. Summer Average Wind Data
meters/ second
0
1
2
3
4
5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours

Annual Revenues Based on 18,500 kWh - Single Family All Electric Home

SCE&G	Rate 8 Residential Service	$2,064
SDGE	Schedule DR Residential Service	$ 3,628
PG&E	Schedule E-1 Residential Service	$ 4,258
SCE	Schedule D Domestic Service	$ 3,171

SOUTH CAROLINA ELECTRIC & GAS COMPANY **ELECTRICITY**

RATE 8 **RESIDENTIAL SERVICE**

AVAILABILITY

This rate is available to customers using the Company's standard service which is specified as a single point of delivery per premises from an existing overhead distribution system to individually metered private residences and individually metered dwelling units in apartment structures or other multi-family residential structures. It is not available for resale service nor shall service be supplied to dwelling units having a total of more than ten rooms, five or more of which are rented or offered for rent to any person or persons not a member, or members, of the immediate family of the owner or lessor of the dwelling units.

A dwelling unit is defined as a room or group of rooms having, in addition to living quarters, kitchen facilities for the sole use of the family or individual occupying such dwelling unit.

CHARACTER OF SERVICE

Alternating Current, 60 hertz, single phase, 120 volts, 2 wire or 120/240 volts 3 wire.

RATE PER MONTH

		Summer (Billing Month June-September)		Winter (Billing Month October-May)	
Basic Facilities Charge:		$ 8.00		$ 8.00	
Plus Energy Charge:					
First	800 Kwhrs. @	$ 0.09954	per Kwhr.	$ 0.09954	per Kwhr.
Excess over	800 Kwhrs. @	$ 0.10938	per Kwhr.	$ 0.09560	per Kwhr.

MINIMUM CHARGE

The monthly minimum charge shall be the basic facilities charge as stated above.

ADJUSTMENT FOR FUEL AND VARIABLE ENVIRONMENTAL COSTS

Fuel costs of $.02742 per Kwhr. are included in the energy charge and are subject to adjustment by order of the Public Service Commission of South Carolina.

STORM DAMAGE COMPONENT

The energy charges above include a storm damage component of $.00043 per Kwhr. for accumulation of a storm damage reserve.

SALES AND FRANCHISE TAX

To the above will be added any applicable sales tax, franchise fee or business license tax which may be assessed by any state or local governmental body.

PAYMENT TERMS

All bills are net and payable when rendered.

SPECIAL PROVISIONS

The Company will furnish service in accordance with its standard specifications. Non-standard service will be furnished only when the customer pays the difference in costs between non-standard service or pays to the Company its normal monthly facility charge based on such difference in costs.

TERM OF CONTRACT

Contracts shall be written for a period of not less than one (1) year. A separate contract shall be written for each meter at each location.

GENERAL TERMS AND CONDITIONS

The Company's General Terms and Conditions are incorporated by reference and are a part of this rate schedule.

San Diego Gas & Electric Company
San Diego, California

Revised Cal. P.U.C. Sheet No. 20811-E
Canceling Revised Cal. P.U.C. Sheet No. 20750-E

Sheet 1

SCHEDULE DR

RESIDENTIAL SERVICE
(Includes Rates for DR-LI)

APPLICABILITY

Applicable to domestic service for lighting, heating, cooking, water heating, and power, or combination thereof, in single family dwellings, flats, and apartments, separately metered by the utility; to service used in common for residential purposes by tenants in multi-family dwellings under Special Condition 8; to any approved combination of residential and nonresidential service on the same meter; and to incidental farm service under Special Condition 7.

This schedule is also applicable to customers qualifying for the California Alternate Rates for Energy (CARE) Program, residing in single-family accommodations, separately metered by the Utility, and may include Non-profit Group Living Facilities and Qualified Agricultural Employee Housing Facilities, if such facilities qualify to receive service under the terms and conditions of Schedule E-CARE.

TERRITORY

Within the entire territory served by the Utility.

RATES

Description - DR Rates	Transm		Distr	PPP	ND	CTC	RS	TRAC		UDC Total	
Summer											
Baseline Energy ($/kWh)	0.01295	I	0.06206	0.00581	0.00046	(0.00156)	(0.00090)	(0.05288)	R	**0.02594**	
101% to 130% of Baseline	0.01295	I	0.07236	0.00581	0.00046	(0.00156)	(0.00090)	(0.04198)	R	**0.04714**	
131% - 200% of Baseline	0.01295	I	0.07236	0.00581	0.00046	(0.00156)	(0.00090)	0.07068	I	**0.15980**	I
Above 200% of Baseline	0.01295	I	0.07236	0.00581	0.00046	(0.00156)	(0.00090)	0.09068	I	**0.17980**	I
Winter											
Baseline Energy ($/kWh)	0.01295	I	0.06206	0.00581	0.00046	(0.00156)	(0.00090)	(0.02711)	R	**0.05171**	
101% to 130% of Baseline	0.01295	I	0.07236	0.00581	0.00046	(0.00156)	(0.00090)	(0.01621)	R	**0.07291**	
131% - 200% of Baseline	0.01295	I	0.07236	0.00581	0.00046	(0.00156)	(0.00090)	0.08043	I	**0.16955**	I
Above 200% of Baseline	0.01295	I	0.07236	0.00581	0.00046	(0.00156)	(0.00090)	0.10043	I	**0.18955**	I
Minimum Bill ($/day)										**0.170**	

Description -DR-LI Rates	Transm		Distr	PPP	ND	CTC	RS	TRAC		UDC Total	
Summer – Care Rates											
Baseline Energy ($/kWh)	0.01295	I	0.06038	0.00581	0.00046	(0.00156)	(0.00090)	(0.04810)	R	**0.02904**	
101% to 130% of Baseline	0.01295	I	0.06966	0.00581	0.00046	(0.00156)	(0.00090)	(0.03721)	R	**0.04921**	
131% - 200% of Baseline	0.01295	I	0.06966	0.00581	0.00046	(0.00156)	(0.00090)	0.03375	I	**0.12017**	I
Above 200% of Baseline	0.01295	I	0.06966	0.00581	0.00046	(0.00156)	(0.00090)	0.03375	I	**0.12017**	I
Winter – Care Rates											
Baseline Energy ($/kWh)	0.01295	I	0.06038	0.00581	0.00046	(0.00156)	(0.00090)	(0.02233)	R	**0.05481**	
101% to 130% of Baseline	0.01295	I	0.06966	0.00581	0.00046	(0.00156)	(0.00090)	(0.01144)	R	**0.07498**	
131% - 200% of Baseline	0.01295	I	0.06966	0.00581	0.00046	(0.00156)	(0.00090)	0.04487	I	**0.13129**	I
Above 200% of Baseline	0.01295	I	0.06966	0.00581	0.00046	(0.00156)	(0.00090)	0.04487	I	**0.13129**	I
Minimum Bill ($/day)										**0.170**	

Notes: Transmission Energy charges include the Transmission Revenue Balancing Account Adjustment (TRBAA) of ($.00068) per kWh and the Transmission Access Charge Balancing Account Adjustment (TACBAA) of ($.00140) per kWh. PPP rate is composed of: Low Income PPP rate (LI-PPP) $.00184/kWh, Non-low Income PPP rate (Non-LI-PPP) $.00208/kWh (pursuant to PU Code Section 399.8, the Non-LI-PPP rate may not exceed January 1, 2000 levels), and Procurement Energy Efficiency Surcharge Rate of $.00189/kWh.

The Non-Baseline rates are for energy used in excess of the baseline allowance.

(Continued)

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ELECTRIC SCHEDULE E-1
RESIDENTIAL SERVICES

Sheet 1

APPLICABILITY: This schedule is applicable to single-phase and polyphase residential service in single-family dwellings and in flats and apartments separately metered by PG&E; to single-phase and polyphase service in common areas in a multifamily complex (see Special Condition 8); and to all single-phase and polyphase farm service on the premises operated by the person whose residence is supplied through the same meter.

The provisions of Schedule S—Standby Service Special Conditions 1 through 6 shall also apply to customers whose premises are regularly supplied in part (but not in whole) by electric energy from a nonutility source of supply. These customers will pay monthly reservation charges as specified under Section 1 of Schedule S, in addition to all applicable Schedule E-1 charges. See Special Conditions 11 and 12 of this rate schedule for exemptions to standby charges.

TERRITORY: This rate schedule applies everywhere PG&E provides electric service.

RATES: Total bundled service charges are calculated using the total rates below. Bundled service customers are billed the greater of the total minimum charge or the otherwise applicable total charge derived from total energy rates.

Customers receiving a medical baseline allowance shall pay for all usage in excess of 130 percent baseline at rates applicable to usage from 131 percent through 200 percent of baseline. No portion of the rates paid by customers that receive a Medical Baseline allowance shall be used to pay the DWR Bond charge. For these customers, generation is calculated residually based on the total rate less the sum of: Transmission, Transmission Rate Adjustments, Reliability Services, Distribution, Public Purpose Programs, Nuclear Decommissioning, Competition Transition Charges (CTC), Energy Cost Recovery Amount, the Fixed Transition Amount (FTA) and the Rate Reduction Bond Memorandum Account (RRBMA).

Direct Access (DA) and Community Choice Aggregation (CCA) charges shall be calculated in accordance with the paragraph in this rate schedule titled Billing.

TOTAL RATES

Total Energy Rates ($ per kWh)	
Baseline Usage	$0.11550 (R)
101% - 130% of Baseline	$0.13131 (R)
131% - 200% of Baseline	$0.24725 (I)
201% - 300% of Baseline	$0.35443 |
Over 300% of Baseline	$0.41059 (I)
Total Minimum Charge Rate ($ per meter per day)	$0.14784

Total bundled service charges shown on customers' bills are unbundled according to the component rates shown below. Where the minimum charge applies with no usage, generation is calculated residually based on the total minimum charge less the sum of: Distribution, Transmission, Reliability Services, Public Purpose Programs, and Nuclear Decommissioning. Where the minimum charge applies with usage, the generation charge is calculated residually based on the total charge less the sum of: Transmission, Transmission Rate Adjustments, Reliability Services, Distribution, Public Purpose Programs, Nuclear Decommissioning, CTC, Energy Cost Recovery Amount, FTA, RRBMA and DWR Bond.

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison — Revised — Cal. PUC Sheet No. 44082-E*
Rosemead, California (U 338-E) — Cancelling Revised — Cal. PUC Sheet No. 43920-E*

Schedule D — Sheet 1
DOMESTIC SERVICE

APPLICABILITY

Applicable to domestic service including lighting, heating, cooking, and power or combination thereof in a single-family accommodation; also to domestic farm service when supplied through the farm operator's domestic meter.

TERRITORY

Within the entire territory served.

RATES

	Delivery Service							Gen[8]	
	Trans[1]	Distrbtn[2]	NDC[3]	PPPC[4]	PUCRF[5]	DWRBC[6]	Total[7]	URG***	DWR
Energy Charge- $/kWh/Meter/Day									
Baseline Service									
Summer	0.00587	0.05441	0.00059	0.00629	0.00024	0.00477	0.07217	0.03412 (I)	0.08614
Winter	0.00587	0.05441	0.00059	0.00629	0.00024	0.00477	0.07217	0.03412 (I)	0.08614
Nonbaseline Service*									
101%-130% of Baseline–Summer	0.00587	0.05441	0.00059	0.00629	0.00024	0.00477	0.07217	0.06091 (I)	0.08614
Winter	0.00587	0.05441	0.00059	0.00629	0.00024	0.00477	0.07217	0.06091 (I)	0.08614
131%-200% of Baseline–Summer	0.00587	0.05441	0.00059	0.00629	0.00024	0.00477	0.07217	0.15468 (R)	0.08614
Winter	0.00587	0.05441	0.00059	0.00629	0.00024	0.00477	0.07217	0.15468 (R)	0.08614
201% - 300% of Baseline–Summer	0.00587	0.05441	0.00059	0.00629	0.00024	0.00477	0.07217	0.20319 (R)	0.08614
Winter	0.00587	0.05441	0.00059	0.00629	0.00024	0.00477	0.07217	0.20319 (R)	0.08614
Over 300% of Baseline–Summer	0.00587	0.05441	0.00059	0.00629	0.00024	0.00477	0.07217	0.25170 (R)	0.08614
Winter	0.00587	0.05441	0.00059	0.00629	0.00024	0.00477	0.07217	0.25170 (R)	0.08614
Basic Charge - $/Meter/Day									
Single-Family Residence		0.029					0.029		
Multi-Family Residence		0.022					0.022		
Minimum Charge** - $/Meter/Day									
Single-Family Residence		0.059					0.059		
Multi-Family Residence		0.044					0.044		

* Nonbaseline Service includes all kWh in excess of applicable Baseline allocations as described in Preliminary Statement, Part H, Baseline Service.
** The Minimum Charge is applicable when the Delivery Service Energy Charge, plus the applicable Basic Charge is less than the Minimum Charge.
*** The ongoing Competition Transition Charge (CTC) of $0.00577 is recovered in the URG component of Generation.
1 Trans = Transmission and the Transmission Owners Tariff Charge Adjustments (TOTCA) which are FERC approved. The TOTCA represents the Transmission Revenue Balancing Account Adjustment (TRBAA) of negative $(0.00024) per kWh, Reliability Services Balancing Account Adjustment (RSBAA) of $0.00032 per kWh, and Transmission Access Charge Balancing Account Adjustment (TACBAA) of $0.00130 per kWh.
2 Distrbtn = Distribution
3 NDC = Nuclear Decommissioning Charge
4 PPPC = Public Purpose Programs Charge (includes California Alternate Rates for Energy Surcharge where applicable.)
5 PUCRF = The PUC Reimbursement Fee is described in Schedule RF-E.
6 DWRBC = Department of Water Resources (DWR) Bond Charge. The DWR Bond Charge is not applicable to exempt Bundled Service and Direct Access Customers, as defined in and pursuant to D.02-10-063, D.02-02-051, and D.02-12-082.
7 Total = Total Delivery Service rates are applicable to Bundled Service, Direct Access (DA) and Community Choice Aggregation Service (CCA Service) customers, except DA and CCA Service customers are not subject to the DWRBC rate component of this Schedule but instead pay the DWRBC as provided by Schedule DA-CRS or Schedule CCA-CRS.
8 Gen = Generation – The Gen rates are applicable only to Bundled Service Customers. When calculating the Energy Charge, the Gen portion is calculated as described in the Billing Calculation Special Condition of this Schedule.

(Continued)

15 Most Effective Utilities in the Southeast (SERC/FRCC Regions)

Based On EIA Form-861 Filings

Year	Utility	NERC	Ownership	Sales GWH	DSM EE	%
2006	Laurens Electric Coop, Inc	SERC	Cooperative	951	12	1.31%
	City of Tallahassee	FRCC	Municipal	2,714	11	0.40%
	Southern Iowa Elec Coop, Inc	SERC	Cooperative	75	0	0.33%
	Reedy Creek Improvement Dist	FRCC	Municipal	1,173	3	0.27%
	Randolph Electric Member Corp	SERC	Cooperative	490	1	0.26%
	Florida Power & Light Co	FRCC	Investor Owned	103,653	199	0.19%
	Tennessee Valley Authority	SERC	Federal	33,008	61	0.19%
	Gainesville Regional Utilities	FRCC	Municipal	1,849	3	0.18%
	Singing River Elec Pwr Assn	SERC	Cooperative	1,326	2	0.17%
	Lee County Electric Coop, Inc	FRCC	Cooperative	3,505	4	0.10%
	Sumter Electric Coop, Inc	FRCC	Cooperative	2,571	3	0.10%
	JEA	FRCC	Municipal	12,800	13	0.10%
	Gulf Power Co	SERC	Investor Owned	11,429	11	0.10%
	Progress Energy Florida Inc	FRCC	Investor Owned	39,432	37	0.09%
	Tampa Electric Co	FRCC	Investor Owned	19,025	17	0.09%
				234,002	379	0.16%

Year	Utility	NERC	Ownership	Sales GWH	DSM EE	%
2005	Laurens Electric Coop, Inc	SERC	Cooperative	925	36	3.89%
	City of Tallahassee	FRCC	Municipal	2,724	11	0.41%
	Southern Iowa Elec Coop, Inc	SERC	Cooperative	77	0	0.30%
	Singing River Elec Pwr Assn	SERC	Cooperative	1,253	4	0.29%
	Randolph Electric Member Corp	SERC	Cooperative	493	1	0.26%
	Gulf Power Co	SERC	Investor Owned	11,239	23	0.20%
	Gainesville Regional Utilities	FRCC	Municipal	1,854	4	0.19%
	Florida Power & Light Company	FRCC	Investor Owned	101,980	184	0.18%
	Tennessee Valley Authority	SERC	Federal	32,368	55	0.17%
	Sumter Electric Coop, Inc	FRCC	Cooperative	2,425	3	0.14%
	Lee County Electric Coop, Inc	FRCC	Cooperative	3,339	4	0.11%
	Tampa Electric Co	FRCC	Investor Owned	18,912	19	0.10%
	Progress Energy Florida Inc	FRCC	Investor Owned	39,177	33	0.08%
	Florida Public Utilities Co	SERC	Investor Owned	825	1	0.07%
	Reedy Creek Improvement Dist	FRCC	Municipal	1,220	1	0.06%
				218,810	377	0.17%

Year	Utility	NERC	Ownership	Sales GWH	DSM EE	%
2004	City of Tallahassee	FRCC	Municipality	2,682	12	0.44%
	Southern Iowa Elec Coop, Inc	SERC	Cooperative	73	0	0.29%
	Singing River Elec Pwr Assn	SERC	Cooperative	1,299	3	0.22%
	Tennessee Valley Authority	SERC	Federal	31,713	56	0.18%
	Tampa Electric Co	FRCC	Investor Owned	18,437	32	0.17%
	Gainesville Regional Utilities	FRCC	Municipality	1,830	3	0.17%
	Gulf Power Co	SERC	Investor Owned	11,046	16	0.14%
	Lee County Electric Coop, Inc	FRCC	Cooperative	3,161	3	0.11%
	Sumter Electric Coop, Inc	FRCC	Cooperative	2,235	2	0.11%
	Florida Power Corp	FRCC	Investor Owned	38,193	27	0.07%
	Central Georgia El Member Corp	SERC	Cooperative	869	1	0.07%
	Reedy Creek Improvement Dist	FRCC	Municipality	1,149	1	0.07%
	Public Works Comm-City of Faye	SERC	Municipality	2,086	1	0.03%
	Palmetto Electric Coop Inc	SERC	Cooperative	1,386	0	0.03%
	Randolph Electric Member Corp	SERC	Cooperative	487	0	0.02%
				116,645	157	0.13%